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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/588,396	06/06/2000	Richard F. Buckley	19546-020-(E-3915)	9558

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EXAMINER

TRAN, KHOA H

ART UNIT	PAPER NUMBER
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3634

DATE MAILED: 10/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/588,396

Applicant(s)

BUCKLEY, RICHARD F.

Examiner

Khoa Tran

Art Unit

3634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08/02/02 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. 6) ☐ Other: _____

Drawings

The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on August 02, 2002 have not been approved because the photo copy of the drawings are very dark that they do not show detail features of the drawings, for an example see Figure 3. Accordingly, applicant is requested to resubmit the proposed corrections for the examiner's review.

Information Disclosure Statement

The information disclosure statement (form PTO 1449) filed February 21, 2002 has not been considered because the filed IDS of the Japanese patents 01302814, 04287915, and 05144756 are incomplete. Note that only the first page of the Abstract of each of these references was filed in August 02, 2002, in response to the Office Action. Applicant is required to resubmit a complete copy of each of these Japanese reference 01302814, 04287915, and 05144756 for the examiner to consider.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). In particular there is no support in the disclosure for the claimed subject matter of the window to be positioned "not more than" 10 mm from the first and second ends of the boat. It should be noted on page 11, lines 18-19, the disclosure does not set forth a restriction for the windows to be located not more than 10 mm away from the boat ends.

Further, there is no support in the disclosure for the windows to "increase radiation distribution", see page 11, lines 16-18.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With respect to claim 1, the claim uses a functional "wherein" clause that is failed to particular point out and distinctively claim the subject matter but only allude to the merit of purposes.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sibley ('230). Sibley ('230) discloses a silicon carbide semiconductor wafer carrier (70) including processes that require the use of high temperatures, see the Abstract and column 1, lines 8-11, column 2, lines 8-9, and column 3, lines 24-25. The

semiconductor wafer boat (70) of Sibley comprising a plurality semiconductor wafers, (only one showed, see Figure 5), receiving in a plurality of slots position between first and second ends of the boat. The plurality of slots (75) on the wafer boat are located on the first (left side) and second (right side) upper supporting guides and on the lower arcuate grooved portion (74), see column 5, lines 48-50, wherein the bottom of the semiconductor wafer is in contact and supported by the slot on the lower arcuate grooved portion, and the at least one window (32) positions substantially in a small distance in from the distal end of the boat. The process of making the wafer boat is through a process of involving high heating through a suitable temperature. See columns 7 and 8. With respect to claims 3 and 13, to one of ordinary skill in the art, it would have been obvious that the silicon carbide would recrystallized itself to a normal state when place in a cooler environment after being removed from the high temperature environment. With respect to the dimensioning of the wafer and the angle of the wafer relatives to the boat, and the distance of the windows locate from the distal ends of the boat, it would have been an obvious matter of engineering design choice as determined through routine experimentation and optimization for one of ordinary skill in the art to routinely dimension the wafer to have a diameter of about 300mm and the thickness of 5mm, and dimensioning the radius angle from the center to the periphery edge of the wafer relatives to the upper supporting guides to be in ranges of 10-80 degrees, and dimension the distance in from the distal end to the window is approximately not more than 10mm for a particular application thus producing no unexpected results. With respect to claim 7, it would have been obvious to one of

ordinary skill in the art as a matter of design choice to make duplication in part of the number of slots on the wafer boat in order to accompany the desire number of semiconductor wafers for a particular application thus producing no new matters. Note the applicant's drawings do not show the boat must support 25 wafers. Further, it is not the main inventive concept of the applicant to have a wafer boat design to hold only 25 wafers, see page 12, lines 19-20. With respect to the range of temperatures approximately between 1000 to 1400 degrees of Celsius, it should be noted, the patentability of the reciting structure, itself, that is to be determined and not how the product is to be constructed or the processes of the product arrive, Sibley ('230) discloses the process of making the wafer boat through a high suitable temperature, i.e., 2000 degrees Celsius, see column 8, lines 31-32. Sibley ('230) does not specifically disclose the temperature is to be in ranges of between 1000 to 1400 degrees of Celsius. However, it is well established by case law that it is not inventive to discover the optimum or workable ranges where the general conditions are known in the art. Further, it is expected, as a part of the level of skill would routinely experiment to discover the optimum or workable ranges for a particular use. Accordingly, it would have been an obvious matter of engineering design choice, as determined through routine experimentation and optimization, for one of ordinary skill in the art to dimension the process temperature to be in ranges between 1000 to 1400 degrees Celsius, thus producing no new and unexpected results.

Response to Amendment

Applicant's arguments filed August 02, 2002 have been fully considered but they are not persuasive.

With respect to applicant's contentions that Sibley ('230) does not teach or suggest an arcuate lower grooved portion has been addressed in the last Office Action.

With respect to applicant's arguments that the Sibley does not teach or suggest the window that serves the purpose of increase radiation distribution, it should be noted that how the rack is to be used is normally not germane to issue of patentability, especially if applicant's structure, even in view of claim language, differs in no way from prior art structure (Ex parte Wikdahl, BdPatApp & Inter, 1/25/89, p.1546).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khoa Tran whose telephone number is (703) 306-3437. The examiner can normally be reached on Monday through Thursday from 8:30 A.M. to 7:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola, can be reached on (703) 308-2686. The fax phone number for this Group is (703) 305-3597 or (703) 305-3598.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-2168.

Furthermore, please do not separately mail the original or another copy unless required by the Patent and Trademark Office. Submission of the original response or a follow-up copy of the response after your response has been transmitted by facsimile